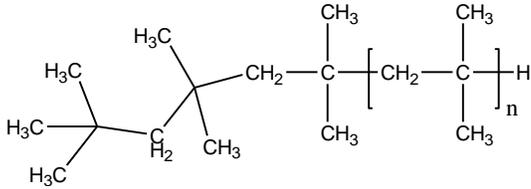


**Sample Name:** Polyisobutylene

**Sample #:** P40525A-IB

**Structure:**

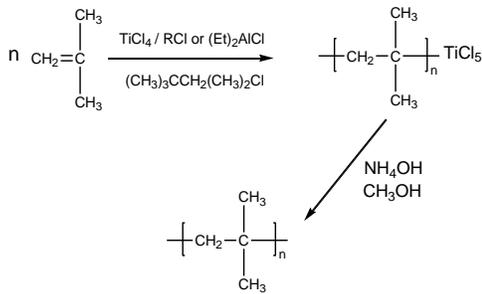


**Composition:**

| $M_n \times 10^3$ | PDI  |
|-------------------|------|
| 97.0              | 1.25 |

**Synthesis Procedure:**

Polyisobutylene is synthesized by living cationic polymerization of isobutylene in hexane at  $-78^\circ\text{C}$  using a tin based catalyst and a 2,4,4-dimethyl pentene / HCl initiator. The reaction scheme is shown below:

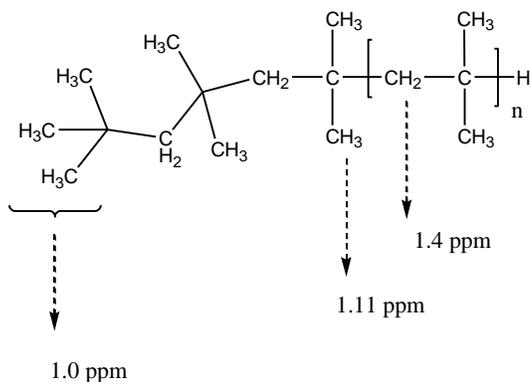


**Purification:**

After polymerization the catalyst residues are removed by filtration and washing with acidic water after which the pH is returned to nominal values and finally the polymer is freeze dried.

**Characterization:**

The molecular weight and polydispersity index (PDI) of polyisobutylene are obtained by size exclusion chromatography.



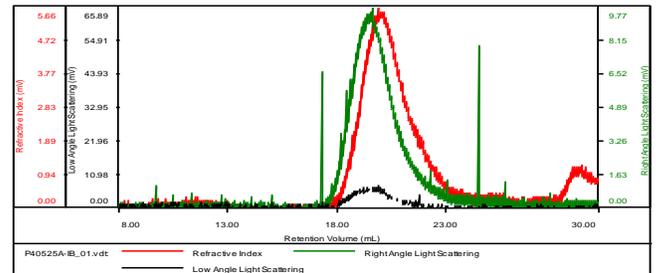
**Solubility:**

Polyisobutylene is soluble in THF, toluene, hexane, pentane and cyclohexane and precipitates from methanol and ethanol.

**SEC elugram of the Sample:**

**P40525A-IB**

|                       |                        |
|-----------------------|------------------------|
| Concentration (mg/mL) | 0.1259                 |
| Sample dn/dc (mL/g)   | 0.1850                 |
| Method File           | PS80K-Feb2017-0000.vcm |
| Column Set            | 3x PL 1113-6300        |
| Solvent               | THF                    |



| Sample            | $M_n$ (Da) | $M_w$ (Da) | $M_w/M_n$ | IV (dL/g) | $M_p$ (Da) |
|-------------------|------------|------------|-----------|-----------|------------|
| P40525A-IB_01.vdt | 95,796     | 119,890    | 1.252     | 1.8437    | 115,450    |